



Exploring the Bronx River

An Educational Experience for Pre-Kindergarten and Kindergarten

DRAFT 1

**HANDS-ON LEARNING
TEACHERS RESOURCE PACKET
Pilot Program and Curriculum**

PILOT HANDS-ON LEARNING TEACHER RESOURCE PACKET FOR
PRE-KINDERGARTEN AND KINDERGARTEN
RIVER ON THE GO! PROGRAM EXHIBIT

Dear Bronx Educators,

*Welcome! Thank you for being one of our pilot sites for our first exhibit, River on the Go. We hope you and your students are ready to encounter a wonderful multi-sensory experience on board the Bronx Children's Museum's mobile bus called "**River on the Go (ROG): Where is Justin the Beaver?**" This exhibit is a facsimile of one of the most beautifully kept secrets of the Bronx, our Bronx River. **River on the Go** is the Bronx Children's Museum's first interactive experience tailored to young children from 3-8 years old from the Bronx, many of whom have never been to a river or a museum.*

*Our Pilot Teacher Resource Packet is designed to ignite your students' curiosity and awareness about the natural resources in the Bronx River. This packet was developed by an early childhood specialist, environmental educators and other New York City school teachers like you. It includes a variety of activities and lessons to make the ROG experience a memorable one. Included are recommendations that will help you prepare your students for the visit; a chart that provides a quick look at the lessons and activities presented, and both pre and post visit activities that meet the **New York City Common Core Standards** (<http://www.corestandards.org/>). In addition, in the appendices, you will find curriculum resources that include ROG GAME CARDS CUT OUTS you can use to make your own games and activities. We are also designing FUN FACT CARDS for teachers as well and will make sure you get these cards in the next few weeks.*

The pre and post activities will help you extend your students' learning far beyond the experience on our museum bus. Pre-visit activities are designed to help you introduce your class to what they will learn on their visit to the River on the Go exhibit. The Post-visit activities have been developed to help your students apply what they have learned at the museum to your curriculum. Moreover, we hope the activities included in this packet and your visit to the River on the Go Bus exhibit will encourage children to explore the possibilities of visiting the Bronx River with their families outside of the classroom experience.

*We hope you and your class will enjoy your upcoming visit to the **River on the Go Exhibit: Where is Justin Beaver?***

Enjoy!

Bronx Children's Museum "River On the Go" Team

Luisa Escalera, Exhibit Design Manager and Educator

Lilli Genovesi, Environmental Educator and Education Director of Trout in the Classroom

Damian Griffin, Environmental Educator and Bronx River Alliance Education Director

Nancy Maldonado Ed.D., Early Childhood Consultant and Early Childhood Associate Professor at Lehman College

Carla Precht, Founding Executive Director

Natalie Wood, Artist and "River On the Go" Program Manager

Table of Contents

Exploring the Bronx River	4
River on the Go: An Educational Experience – Table	5
Preparing for the Trip	7
Lesson Plans.....	8
Lesson Plan 1: Pre-Visit – What is a River?.....	9
Lesson Plan 2: Post-Visit – Beaver Track Patterns.....	10
Lesson Plan 3: Post-Visit – Bronx River Memory Quilt	11
Lesson Plan 4: Post-Visit – Fauna and Flora in the Bronx River	12
Lesson Plan 5: Post-Visit – Life Cycle of the White Oak Tree	13
River on the Go: Web Resources.....	15
Songs	17
The Wheels on the Museum’s Bus.....	18
A Fish is an Animal.....	19
Brook Trout, Brook Trout.....	20
Willow Tree, Willow Tree.....	21
Addendum: Beaver Tracks.....	22



DRAFT 1

Exploring the Bronx River

River On the Go

An Educational Experience

Pilot Program and Curriculum

“River On the Go”: An Educational Experience

Table: Pre-Kindergarten /Kindergarten: Exploring the Bronx River

River on the Go Objectives	Pre-Activities and Discussion	ROG Experience	Post Activities/ Discussion and Evaluation	Standard Correlation
Introduce children to the flow of water from rain to stream to ocean and the flora and fauna.	Read <u>Follow the River from Brook to Ocean</u> , Arthur Dorros, Harper Collins Publisher ISBN 0-06-4451-115-1	A Sensory Experience Flora and fauna (plant and animals) of the Bronx River	Drawings of the Bronx River environment including flora, fauna as well as water.	NCSS Stnd: III.E; III.F; Science Prekindergarten Benchmark: Children ask questions and make predictions based on observations and manipulation of things and events in the environment
Ensure preparation for ROG experience.	Introduction to “River on the Go” Lesson Plan #1: What is a River? See Preparing children for the “River on the Go” Exhibit		Lesson Plan #2: Beaver Tracks Patterns. Using beaver tracks to make patterns. Read <u>Little Beaver and the Echo</u> by Amy McDonald Puffin Books ISBN-10: 0698116283 ISBN-13: 978-0698116283	
Elicit prior experiences about the Bronx River and draw up question from children.	(K) = What I know (W)= What I want to know (H)= How I will find out *(L) = see evaluation		Lesson Plan #3: Bronx River Memory Quilt. Group collage of the Bronx River environment. Lesson Plan #4: Fauna and Flora in the Bronx River. Using the water table, purchase miniature replicas of Bronx animals and plants. (Continued on next page.)	

River on the Go Objectives	Pre-Activities and Discussion	ROG Experience	Post Activities/ Discussion and Evaluation	Standard Correlation
			<p>Lesson Plan #5: Life cycle of the White Oak Tree. Read <u>Life Cycle of a White Oak Tree</u> by Ruth Thompson, Power kids, Press: ISBN-10: 1435828887</p> <p>Collect acorns</p> <p>Finish KWHL chart *(L) what children learned.</p>	

“The River on the Go” Experience

Preparing for the Trip

The Bronx Children’s Museum knows that field trips are an excellent way to foster higher level thinking in young children. The experiences available on the “River on the Go” bus will surely stimulate a plethora of questions and conversation among children in your classroom. The “River on the Go” bus experience will be full of surprises. The exhibit is filled with wonderful touchable objects but due to the nature of the exhibit we recommend that participants clean their hands after the exhibit. (hand sanitizer is available on the bus for all children). Remember though, that in some cases children will be asked not to touch an object because of its fragility.

The following are recommendations on to how teachers can best prepare for a class visit to the “River on the Go” Bus:

- Read the book we are lending you called “Follow the River from Brook to Ocean, by Arthur Dorros, or another book of your choice that discusses the subject of rivers and other bodies of water;
- Introduce the “River on the Go” bus exhibit by telling the children that they will be entering a bus that holds countless secrets about the Bronx River. Explain to them that they will assume the role of scientists and explorers and will visit a special friend on the bus, “Justin the Beaver”. Please make them aware that there has been a real beaver citing in the Bronx River that other children have named “Justin”;
- Ask your students to predict what things they might see or hear at the Bronx River;
- Show the children a picture of the “River on the Go” bus (See appendix C);
- Explain that the exhibit has been created to introduce them to a beautiful river located in their neighborhood, called the “Bronx River”;
- Remind the children that they must be as QUIET as a mouse on the bus in order to become real scientists and explorers. Explain that scientists and explorers use all their senses when they do their work.



Lesson Plans

Pre-Kindergarten - Kindergarten

Pre-Visit

LESSON PLAN #1: What is a River

Grade level: Pre-Kindergarten/Kindergarten

Standard/s:

- Reading Standards for Literacy in Science Key Ideas and Details: 1, 2, 3
- Child describes topographical features of familiar places (hill, river, roads, mountains, etc.).

ROG Objective/s: Introduce children to the water cycle, water shed, and the flora and fauna.

Motivation: Read Follow the River from Brook to Ocean by Arthur Dorros,

Materials: Chart paper

Procedure:

1) After reading and then discussing Follow the River from Brook to Ocean, use a KWHL Chart to engage the class in a discussion about what they know about our rivers.

Sample:

Figure 1.

K (What I <i>know</i>)	W (What I <i>want</i> and need to know)	H (How I will find out)	L (What I <i>learned</i>)

PRE-TRIP:

Record their answers for the first three letters of the chart:

K (what I know)

W (what I want and need to know)

H (how I will find out)

POST-TRIP:

* Complete last column, **L** “What I learned”, after the visit to the River on the Go exhibit.

Evaluation: Record the children’s descriptions about what they learned from the exhibit on the (L) column of the KWHL Chart (the experience chart). Save samples for their work sampling portfolio and in your teacher’s log, document the knowledge and skills the children acquired as result of the trip.

Post-Visit

LESSON PLAN #2: Beaver Tracks Patterns

Grade level: Pre-Kindergarten/Kindergarten



Standard/s:

- Reading Standards for Literacy in Science Key Ideas and Details: 1, 2, 3
- Pre-kindergarten Benchmark Indicator: Child organizes his or her observations of objects and events by identifying, classifying, etc.

Motivation: Read, Little Beaver and the Echo by Amy McDonald

Objective/s :

To help children recognize patterns - large and small - so they can order, compare, and describe objects according to size. Children will use beaver tracks to create a pattern.

Materials

- Make multiple copies of the Beaver tracks from your FUN FACT CARDS (see coming addendum with beaver track cut outs);
- Cut out tracks and fill two bags:
 - One bag of small beaver tracks (12 pieces);
 - One bag of large beaver tracks (12 pieces);
- White strip of drawing paper (for each child);
- Glue;
- Crayons;
- Pencils

Procedure:

1. Have a discussion with children about the concept of patterns and use the cut- out prints of small and large beaver tracks to create examples and on-examples of simple patterns. Ask the children, “Is this a pattern or not a pattern? Can you tell me about (describe) the pattern?”
2. Show children how to order, compare and describe a pattern with beaver prints of the same color and different sizes (e.g., small/large). Ask children, to help you describe the patterns.
3. Allow children to create their own patterns using the beaver tracks. Ask the children to describe their patterns then glue them on the strip of drawing paper.

Evaluation: Save samples of their patterns for their work sampling portfolio and note in your teacher’s log document the knowledge and skills children acquired- for example ordering, comparing, and describing objects according to size.

Post-Visit

LESSON PLAN #3: Bronx River Memory Quilt

Grade level: Pre-Kindergarten/Kindergarten

Standard/s:

- Reading Standards for Literacy in Science Key Ideas and Details: 1, 2, 3
- Child describes topographical features of familiar places (hill, river, roads, mountains, etc.).

ROG Objective/s:

Through drawings, help children recall their visit to the River on the Go bus. The drawings should depict different aspects of their visit including the flora and fauna of the environment

Motivation: Review the **L** - “What I learned” section of the KWHL Chart. Collect and share all of the children’s drawings and then follow the procedure below.

Materials: Chart paper; Crayons/Markers

Procedure:

1. Have all the children share their drawings with each other during circle time. Suggest the creation of a Memory Quilt as a way to remember the trip to the River on the Go exhibit;
2. In creating the Memory Quilt, ask children to highlight the animals (flora) and plants (fauna) found in the river. Combine the pictures onto a large poster paper to create a class quilt. Include a dictated description of what their drawing entails;
3. Include a dictated description of what their drawing entails.

Evaluation: Record what the children have dictated to you about what they learned from the ROG exhibit about the fauna and flora in the Bronx River. Save samples of their work for their portfolio and document in your teacher’s log the knowledge and skills they have acquired.

Post-Visit

LESSON PLAN #4: Fauna and Flora in the Bronx River

Grade level: Pre-Kindergarten

Standard/s:

- Reading Standards for Literacy in Science Key Ideas and Details: 1, 2, 3
- Benchmark Indicator: Child manipulates and observes objects in his or her surroundings to develop conclusions

Motivation: Present the Fauna and Flora FUN CARDS (to be delivered to your school within a few weeks) and the GAME CARD CUT OUTS to the children and ask them to recall what they saw at the River on the Go Bus exhibit.

ROG Objective/s:

Children should be able to identify and recreate the fauna and flora of the Bronx River.

Materials:

- Water table;
- One bag of plastic animals (miniature eels, snapping turtles, frogs, ducks, etc.);
- One bag of plastic plants;
- River stones;
- Green and yellow food coloring;
- ROG GAME CARD CUT OUTS

Procedure:

1. Fill up one-half of the water table with water;
2. Allow a small group of children to squeeze two drops of each color in the water, each child should get a turn to add a color to the water.
3. Have each child swish the water around until it turns a brown/green color;
4. In order to create a more realistic model of the Bronx River, encourage children to place the plastic animals, plants and river rock into the water table. Use the ROG GAME CARD CUT OUTS as you wish to reinforce learning.

Evaluation: Photograph children at playing and record their conversations about the river. Save sample photographs of their water play in their portfolio and document in your teacher's log the knowledge and skills they have acquired such as, ordering, comparing, and describing objects according to size.

Post-Visit

LESSON PLAN #5: Life Cycle of the White Oak Tree

Grade level: Kindergarten

Adapted from a lesson provided by Ann Donzella Owens, Science Cluster Teacher

Standard/s:

- Reading Standards for Literacy in Science Key Ideas and Details: 1, 2, 3
- Benchmark Indicator: Child manipulates and observes objects in his or her surroundings to develop conclusions

ROG Objective/s:

What does the White Oak tree need to live and thrive?

Motivation: Take the children on a neighborhood walk to an area that has oak trees. Collect acorns if they are still on the ground and bring them back to the classroom. Teachers should first scout around the block to make sure there is an Oak Tree for the children to “find.” If not, you will need to modify or not use this lesson plan to be more generic.

Read: The Life Cycle of an Oak Tree by Ruth Thompson.

Initiate a discussion about the White Oak trees that grow around the Bronx River. Encourage children to pay attention to information they receive regarding the seasonal changes for white oak trees the FUN FACT Cards will be very useful in helping them remember important facts about these trees. When using the recommended book remember to focus on only one or two pages at a time and discuss acorns and the leaves of the white oak tree that are green but turn red or purple in the fall. Also remember to introduce the children to relevant vocabulary such as: *Life cycle, soil, root, seed (acorn), seedling, sprout, stem and trunk.*

Materials:

- Styrofoam cups (8oz);
- 3lb bag of planting soil;
- Child sized garden shovel;
- Water spray bottles;
- Acorns collected on neighborhood walk.

Procedure:

1. Prepare table with plastic liner, Styrofoam cups, soil, spray bottle filled with water
2. Work in small groups of 4-5 children at a time during free period;
3. Have students place their acorns in the container on the table;

4. Have children fill cups with soil, make a hole with their fingers and plant their acorn. Sprinkle more soil on top to cover the hole and have the child spray 10 squirts into their Styrofoam cup.
5. Review what the acorn needs to live and grow to become an oak tree just like its parent plant (soil, sun, water, space).

Evaluation: Photograph children planting their acorns. Record their conversations about the White Oak tree acorns. Save sample photographs in their work portfolio and document in your teacher's log the knowledge and skills they've acquired regarding the life cycle of an oak tree.



“River On the Go”

Web Resources

Web Resources

The ROG activities presented provide educational opportunities for young children to prepare them to have an understanding and pre-visit connections prior to their visit to the “River On the Go” exhibit. Additionally, post visit activities and reflections will help to inspire young children to become stewards and protectors of the Bronx River.

<http://bronxchildrensmuseum.org/>

<http://bronxchildrensmuseum.org/about.htm>

<http://bronxriver.org/>

<http://bronxriver.org/?pg=content&p=getinvolved&m1=40>

<http://bronxriver.org/puma/images/usersubmitted/file/Walk1.pdf>

<http://bronxriver.org/puma/images/usersubmitted/file/Walk2.pdf>

<http://bronxriver.org/?pg=content&p=bronxriverresources&m1=82>

<http://www.troutintheclassroom.org/>



“River On the Go”

SONGS

The Wheels on the Bronx Museum's Bus

Adapted from The Wheels on the Bus.

Words by Lillit Genovesi

The wheels on the bus go round and round,
round and round,
round and round.
The wheels on the bus go round and round,
all through the Bronx.

The rocks in the river spin round and round,
round and round,
round and round.
The rocks in the river spin round and round,
all through the Bronx.

The fish in the river swim up and down;
up and down;
up and down;
The fish in the river swim up and down;
all through the Bronx..

The leave on the trees sway side to side;
side to side;
side to side;
The leave on the trees sway side to side;
all through the Bronx.

The wings on the birds go flap, flap, flap;
flap, flap, flap;
flap, flap, flap;
The wings on the birds go flap, flap, flap;
all through the Bronx.

The tail on the beaver goes splash, splash, splash;
splash, splash, splash,
splash, splash, splash,
The tail on the beaver goes splash, splash, splash;
all through the Bronx.



A Fish is an Animal...

Adapted from This is the Way.

Words by Ann D. Owen



Alewife Herring

A fish is an animal that
swims, swims, swims
swims, with fins

swims, with fins (place both hands together with thumbs up to make a fish swimming)

A fish is an animal that
swims, swims, swims
every single day

It swims in waters cool and clean
cool and clean

cool and clean

It swims in waters
cool and clean
every single day

It eats tiny insects
that it finds, that it finds
that it finds (make an worm movement with your pointer finger)

It eats tiny insects
that it finds
in streams that move this way (make a waving hand motion)

A fish is an animal that
swims, swims, swims
swims, with fins
swims, with fins (place both hands together with thumbs up to make a fish swimming)

A fish is an animal that
swims, swims, swims
every single day

Brook Trout, Brook Trout...

Adapted from Bluebird, Bluebird.

Words by Ann D. Owen



Brook Trout

*Have the students make a circle like they do for Bluebird, Bluebird and sing this song while moving in and out while students hold their hands up high to the tune of blue bird, blue bird.

Brook trout, brook trout
swimming through the water
Brook trout, brook trout
swimming through the water
Brook trout, brook trout
swimming through the water
oh brooky are you swimming?

Take a little girl (or boy) and tap her (or him)
on the shoulder
Take a little girl and tap her
on her shoulder
Take a little girl and tap her
on her shoulder
Oh brooky are you swimming?

*Continue until you have a line of brook trout moving through the stream!

Willow Tree, Willow Tree...

Adapted from Teddy Bear, Teddy Bear.
Words by Nancy S. Maldonado

Willow trees, willow trees, growing so serene,
Willow trees, willow trees, graceful as can be,
Willow trees, willow trees swaying in the breeze,
Willow trees, willow trees, dancing just for me.



Willow Tree, Bronx River

Have children raise their arms over their head and sway them
side to side like willow branches swaying in the breeze



“ADDENDUM”

Beaver Tracks Cut-outs for Lesson Plan #2

Beaver Tracks

